

KOK, Ye.P.

Conduction aphasia. Zhur. nevr. i psikh. 65 no.12:1777-1780 '65.

(MIRA 19:1)

1. Klinika nervnykh bolezney (zaveduyushchiy - prof. N.A. Kryashova)  
Instituta fiziologii im. Pavlova (direktor - akademik V.N. Chernigovskiy), Leningrad. Submitted April 27, 1963.

KOK, Ye.P.

Disorders in the higher visual functions following infraparietal  
lesion of the dominant or subdominant hemisphere. Zhur. vys.  
nerv. deiat. 16 no. 1:19-27 Ja-F '66 (MIRA 19:2)

1. Institut neyrokhirurgii im. N.N. Burdenko AMN SSSR.  
Submitted July 14, 1964.

USSR/ Minerals - Spectral analysis

Card 1/1 Pub. 43 - 84/97

Authors : Koka, P. A., and Salomatina, G. A.

Title : Spectrographic determination of admixtures in dolomite and Dinas brick

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, page 294, Mar-Apr 1954

Abstract : A method utilizing an AC-arc generator was developed for spectrographic analysis of dolomite and Dinas brick. The accuracy of the spectrographic method was found to match the accuracy of chemical methods and correctly satisfies all technological requirements.

Institution : Academy of Sciences Kaz-SSR, Institute of Refractories and Structural Materials

Submitted : .....

Service of water resistant dolomite brick in steel making

1 m d

Koka, P.A.

APPROVED FOR RELEASE: 09/18/2001

K-7

CIA-RDP86-00513R000723620019

USER/Optics - Optical Methods of Analysis

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13087

Author : Koka, P.A., Salomatina, G.A.

Inst : Institute of Refractories and Structural Materials,  
Academy of Sciences, Kazakhstan, SSR

Title : Spectrographic Determination of Impurities in Dolomite  
and Dinas.

Orig Pub : Zavod. laboratoriya, 1955, 21, No 9, 1061-1066

Abstract : The contents of  $\text{ClO}_2\text{Al}_2\text{O}_3$ ,  $\text{Fe}_{\text{tot}}$ ,  $\text{Mn}_{\text{tot}}$ , and  $\text{TiO}_2$  in dolo-  
mite was determined. In the case of dinas, there was de-  
termined along with the above substances, also the contents  
of  $\text{Fe}_2\text{O}_3$ ,  $\text{CaO}$ ,  $\text{MgO}$ , and copper, if the dinas was used in  
the lining of a copper-refining furnace of the reflecting

ZUBAKOV, S.M.; RABIN, P.N.; KOKA, P.A.; KARLYSHEV, B.N.; POLYAKOVA, T.P.

Mineralogical composition of chromite ores from the Kimpersaskiy  
deposit. Trudy Inst. stroi. i stroimat. AN Kazakh SSR 1:114-130  
'58. (MIRA 11:6)

(Aktyubinsk Province--Chromite)

S/058/62/000/007/033/068  
A061/A101

AUTHORS: Zakharov, V. K., Koka, P. A.

TITLE: On the possible use of a "cactus"-type apparatus for flame photometry

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 16, abstract 70135  
("Tr. Kazakhsk. n.-i. in-ta mineral'n. syr'ya", 1960, no. 3, 350 - 351)

TEXT: A test made with a "cactus"-type microcentrometer for use in flame photometry is described. The "cactus"-type apparatus, fitted out with a YM-2 (UM-2) universal monochromator, is insignificantly remodeled to the effect that background and filter compensation is inserted in the circuitry and the ionization chamber voltage stabilizer is eliminated. The apparatus has displayed good performance characteristics in routine analyses for Rb, Cs, and other elements.

F. Ortenberg

[Abstracter's note: Complete translation]

Card 1/1



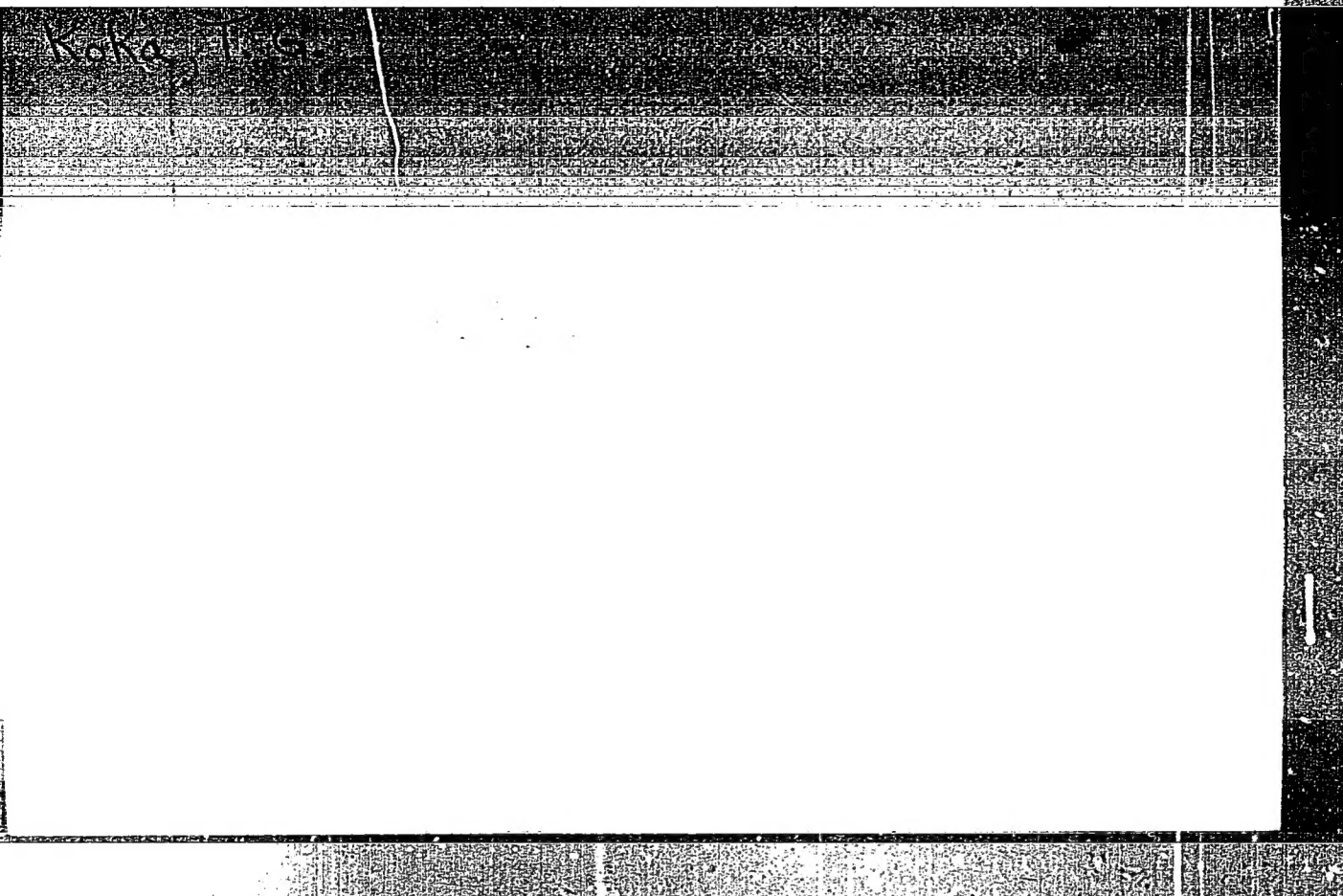




KOKA, T. G.		11 R	
<p>The point of formation of catalase in the animal organism and the influence of vegetable poisons on the catalase contents of the blood and tissues. A. K. Danielson and T. G. Koka. <i>Bull. biol. med. exp. U. R. S. S.</i> 5, 545 H (1967). <i>Chem. Zvezd</i> 1928, 1, 3221. In most cases a decrease in catalase content followed the injection of <i>adrenalin</i> into the organs (with the exception of the kidneys) of rats and dogs. An antagonistic effect was obtained with <i>ergotamine</i>. The catalase content of the organs increased for the first 10 min. after the injection of <i>abropins</i>, then decreased for the next 30 min. The results obtained indicate that vegetable poisons produce no quant. change in the abs. amt. of catalase present in the organism, but only alter its distribution between the blood and tissue.</p> <p>M. G. Moore</p>			
<p>AGN-55A METALLURGICAL LITERATURE CLASSIFICATION</p>			

"APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723620019-1



APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723620019-1"

KOKA, T. G.

"On the Problem of Vitamin B<sub>1</sub> Deficiency in Typhus Patients and Its Influence on the Secretion of Total Nitrogen With the Urine." Cand Med Sci, Second Moscow State Medical Inst imeni I. V. Stalin, 17 Nov 54. (VM, 9 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

KOKA, T. G.

KOKA, T.G.; CHERNAYA, A.V.

Vitamin B<sub>1</sub> deficiency in children with scarlet fever. *Pediatrics*  
no. 6:60-61 N-D '54. (MLRA 8:4)

1. Is biokhim. laboratorii '2-y klin. infekts. bol'nitsy (glav.  
vrach D.T. Titenkov [deceased])  
(VITAMIN B<sub>1</sub> deficiency  
in scarlet fever in child.)  
(SCARLET FEVER, manifestations  
vitamin B<sub>1</sub> defio.)

KOKA, Wladyslaw

Voltage stabilization by corona discharge. Postepy fizyki  
14 no.5:585-604, '63.

1. I Katedra Fizyki, Politechnika, Gdansk.

KOKACHEV, V.

Small-sized dynamic loudspeaker. Radio no.9:49-52 S '64.  
(MIRA 17:12)

AUTHOR: Kokachev, V. (Leningrad) 107-58-3-26/41  
TITLE: ~~Moving Cores~~ for Induction Coils (Podvizhnyye serdechniki k  
katushkam inductivnostey)  
PERIODICAL: Radio, 1958, Nr 3, p 36 (USSR)  
ABSTRACT: The author suggests a method for home-made ferrite cores for  
coils. A carbonyle core is glued to a bolt made of fiber  
glass, ebonite or pertinax or some other insulating material  
and held in place by a nut glued to the coil form. The art-  
icle is based on the description of a coil, published in  
"Radio", 1956, Nr 11, p 37. There is one diagram.  
1. Coils--Induction 2. Cores--Applications 3. Cores  
--Characteristics

Card 1/1

KOKACHEV, V. (Leningrad)

Capacitor with a solid dielectric. Radio no.12:22-23 D '60.  
(MIRA 14:1)  
(Electric capacitors)



KOKACHEV, V.

Miniature receiver using two transistors. Radio no. 1:33-34-0 Ja '65.  
(MIRA 18:4)

KOKACHEV, V. (Leningrad)

Band switch for pocket radios. Radio no. 7:30-31 J1 '65.  
(MIRA 18:9)

KOVACS, E.; KOKAI, K.; MAZAREAN, H.H.

Investigation of the change in catalase activity of fucidin-resistant *Staphylococcus aureus* cultures. *Acta microbiol. acad. sci. Hung.* 12 no.3:223-227 '65.

1. Biochemisches Institut (Leiter: Gy. Domjan) der Medizinischen Universität, Szeged. Submitted April 12, 1965.

KOVACS, Endre, HEINER (Mrs), MAZAREAN, Hortenzia, KOKAI, Karoly; Medical University of Szeged, Institute of Biochemistry (Szegedi Orvostudományi Egyetem, Biokémiai Intézet).

"Study of the Respiration and of the Mechanism of Catalase Effect of Staphylococcus Aureus Cultures in the Course of Antibiotic Adaptation."

Budapest, Kiserletes Orvostudomány, Vol XVIII, No 5, Oct 66, pages 454-459.

Abstract: [Authors' Hungarian summary] In the course of adaptation to fucidin, the catalase activity of the Staph. aureus culture decreases greatly. The induction of catalase in the bacterial culture occurs at the time of great decrease in oxygen pressure, that is, at the time when the oxygen consumption of the cells is at its highest intensity. Because of its reducing properties, when ascorbic acid is added to the culture medium, it decreases suddenly the oxygen pressure of the culture and thus provides more rapidly the conditions for catalase induction. Since, in contrast to the peroxidase system, catalase is capable of insuring the oxidation process of the cells with lesser amounts of oxygen as well, its role is to insure the stationary phase of development. In the course of fucidin adaptation, there is a decrease in catalase activity which in turn results in the shortening of the stationary phase. 1 Hungarian, 13 Western references. [Manuscript received 25 Sep 65.]

1/1

- 5 -

L 32827-66 T JK/OD-2  
ACC NR: AP6020272

SOURCE CODE: HU/0028/65/012/003/0223/0227

AUTHOR: Kovacs, Endre (Ungarn); Kokai, Karoly (Ungarn); Mazarean, Hortenzia  
(Ungarn)

ORG: Institute of Biochemistry/directed by Gy. Domjan/, Medical University of  
Szeged, Szeged

TITLE: Investigation of the change in catalase activity in fucidine-resistant  
Staphylococcus aureus cultures

SOURCE: Academia scientiarum hungaricae. Acta microbiologica, v. 12, no. 3, 1965,  
223-227

TOPIC TAGS: bacteriology, enzyme, biologic respiration

ABSTRACT: The catalase activity of the cells of Staphylococcus aureus cultures gradually ceases in the course of fucidine adaptation. There is no enzyme induction in the fucidine-fast cultures since the equilibrium of the processes is shifted toward catalase-independent oxidation mechanisms during the adaptation and, therefore, fucidine has no influence on the respiration rate of the microorganisms undergoing adaptation. Orig. art. has: 2 figures. [Orig. art. in German] [JPRS]

SUB CODE: 06 / SUBM DATE: 12Apr65 / ORIG REF: 001 / OTH REF: 016

Card 1/1 4/5

STASEK, VL.; SKALOVA, M.; KOKAJICEK, M.; MALY, VL.

Our experience with irradiation of bronchogenic carcinoma by the grid method. Neoplasma, Bratisl. 5 no.3:276-282 1958.

1. Oncological Laboratory, Radiological Clinic and Institute for the Organisation of Public Health, Faculty of General Medicine, Charles University, Prague. Doc. Dr Stasek and co-workers, Radiologicka klinika U nemocnice 2, Praha 2.

(LUNG NEOPLASMS ther.

x-rays in inoperable cancer, grid method)

(RADIOTHERAPY, in various dis.

cancer of lungs, inoperable cases, grid method)

KOKANBAYEVA, R.F.

Forensic psychiatric evaluation of organic disease of the  
central nervous system with a recurrent course. Prak.  
sudebnopsikh. ekspert. no.5:13-20 '61. (MIRA 16:4)  
(FORENSIC PSYCHIATRY) (NERVOUS SYSTEM--DISEASES)

KOKANBAYEVA, R.F.

Comparative evaluation of aminazine and serpasil on the state  
of the vegetative nervous system in schizophrenia. Probl. sud.  
psikh. no.13:221-228 '62. (MIRA 18:9)



NEVZOBOVA, T.A.; KOKANBAYEVA, R.F.

Psychical changes in epidemic hepatitis. Zhur.nevr. i psikh.55  
no.8:561-565 '55. (MLRA 8:10)

1. Iz psikhiatricheskoy kliniki (sav.-prof. Ye. A. Popov) i  
Moskovskogo ordena Lenina meditsinskogo instituta.

(HEPATITIS, INFECTIOUS, complications,  
ment.disord.)

(MENTAL DISORDERS, etiology and pathogenesis,  
hepatitis, infect.)

KOKANBAYEVA, R. F., Cand Med Sci -- (diss) "Effect of aminazine and  
serpazine on the condition of the vegetative nervous system of schizo-  
phrenics." Moscow, 1960. 23 pp; (Second Moscow State Medical Inst im  
N. I. Pirogov); 250 copies; price not given; (KL, 51-60, 121)

**KOKANBAIEVA, R.F.**

Clinical importance of the effect of aminazine and serpasil on the vegetative nervous system. Sov.med. 24 no.3:114-119 Mr '60. (MIRA 14:3)

1. Iz kafedry psikiatrii imeni S.S.Korsakova (zav. - prof. Ye.A. Popov) i Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

(CHLORPROMAZINE) (RESERPINE)  
(NERVOUS SYSTEM, AUTONOMIC)

KOKANBAYEVA, R.F.

Dynamics of the tonus and reactivity of the vegetative nervous system in schizophrenia during aminazine and serpasil treatment.  
Med. zhur. Uzb. no.3:50-54 Mr '60. (MIRA 15:2)

1. Iz kafedry psikhiiatrii imeni S.S.Korsakova (zav. - prof. Ye.A.Popov)  
I Moskovskogo meditsinskogo instituta imeni I.M.Sechenova,  
(NERVOUS SYSTEM, AUTONOMIC) (SCHIZOPHRENIA)  
(CHLORPROMAZINE) (SERPASIL)

KOKANOV, R.F.; ZEMSKOV, L.N.

Paranoid form of schizophrenia with a slow course and manifestations of dissimulation developing according to the folie à deux type. Prak. sudebnopsikh.ekspert. no.3:12-22 '61. (MIRA 17:10)

NEVZOROVA, T.A.; KOKANBAYEVA, R.F.

Clinical aspects of the psychopathic development of the personality. Trudy 1-go MMI 34:242-253 '64. (MIRA 18:11)

1. Kafedra psikhiiatrii (zav. - zasluzhennyy deyatel' nauki prof. V.M. Banskhoikov) 1-go Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

NEVZOROVA, T.A., dotsent; KOKANBAYEVA, R.F., kand. med. nauk

Therapeutic importance of hyposulfite in schizophrenia with an acute course. Trudy 1-go MMI 25:76-87 '63. (MIRA 17:12)

1. Kafedra psikiatrii 1-go Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova (sav. kafedroy-prof. V.M.Banshchikov).

KOKANBAYEVA, R.F., kand. med. nauk

Effectiveness of imizin in depressive states and hypochondria. Trudy  
1-go MMI 25:305-314 '63. (MIRA 17:2)

1. Kafedra psikhiiatrii 1-go Moskovskogo ordena Lenina meditsinskogo  
instituta imeni I.M.Sechanova (zav. kafedroy prof. V.M.Banshchikov),  
TSentral'nyy institut sudebnoy psikhiiatrii imeni prof. Serbskogo  
(direktor dotsent G.V.Morozov, nauchnyy rukovoditel' prof. S.F.Semenov).



KOKANBAYEVA, R.F.

Materials on the characteristics of the action of aminazine and  
serpasil on the vegetative nervous system of schizophrenics. Trudy  
Gos.nauch.-issl.inst.psikh. 27:222-227 '61. (MIRA 15:10)

1. Pervyy Moskovskiy Ordena Lenina meditsinskiy institut imeni  
Sechenova. Dir. - prof. V.V.Kovanov. Kafedra psikiatrii imeni  
S.S.Korsakova. Zav. deyatvitel'nyy ohlen AMN SSSR prof. Ye.A.  
Popov [deceased].

(SCHIZOPHRENIA)

(CHLORPROMAZINE)

(RESERPINE)

KOKANBAYEVA, R. Kh.

"Diet therapy in circulatory insufficiency." Tashkent State Medical Institute V. M. Molotov. Tashkent, 1956. (DISSERTATION For the Degree of Candidate in MEDICAL SCIENCE.)

Knizhnaya letopis'  
No 33, 1956, Moscow

BAKHADYROV, A., kand.med.nauk; KOKANBAYEVA, R.Kh., kand.med.nauk

Therapeutic action of quateron in stenocardia. Terap.arkh.  
no.7:56-58 J1 '62. (MIRA 15:8)

1. Iz kafedry gosital'noy terapii (zav. - ohlen-korrespondent  
AMN SSSR prof. Z.I. Umidova) Tashkentского meditsinskogo insti-  
tuta.

(ANGINA PECTORIS) (PARASYMPATHOLYTICS)

KOKANIN, I., starshiy ekonomist; YAKUBETS, F.

In socialist countries. Obshchestv.pit. no.5:57-58 My '62.  
(MIRA 15:5)

1. Gosplan RSFSR (for Kokanin).
2. Direktor tresta restoranov,  
g. Koshitse (for Yakubets).  
(Restaurants, lunchrooms, etc.)

S/137/60/000/012/041/041  
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 12, p. 273,  
# 30266

AUTHORS: Naymark, L.E., Chalykh, P.N., Kokanov, A.

TITLE: Quantitative Spectrographical Determination of Beryllium and Scandium in Products of Processing Beryllium-Containing Ores

PERIODICAL: Izv. AN KazSSR, Ser. metallurgii, obogashcheniya i ogneporov, 1959, No. 1 (4), pp. 85 - 89 (Kaz. summary)

TEXT: Samples and standards were mixed at a 1 : 1 ratio with a buffer mixture composed of carbon powder with 1% BaO and 2% Cr<sub>2</sub>O<sub>3</sub> (Ba as a comparison element for Be, and Cr for Sc). After preliminary roasting in an electrode, acting as a cathode, the mixture was burnt in the anode of a d-c arc at 10 amp. The time of full burning out of the sample was 2 - 3 minutes. An MCP-22 (ISP-22) spectrograph was used. The analytical pairs of lines and the ranges of concentrations to be determined are presented. The standards were prepared by the synthetic method on the base of a mixture of CaSO<sub>4</sub> and oxides of Si, Al, Mg and Fe.

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S/137/60/000/012/041/041  
A006/A001

Quantitative Spectrographical Determination of Beryllium and Scandium in Products of Processing Beryllium-Containing Ores

Be and Sc were introduced into the standards in the form of oxides. Samples with a high Be and Sc content were, prior to the analysis, diluted with a mixture on the base of which the standards were prepared. The method was developed on specimens of very variegated composition and ensures the determination of 0.0003 - 0.3% Be and 0.001 - 1% Sc at a mean relative error of  $\pm 8\%$ . There are 7 references.

A. Sh.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

SMORODIN, Yefim Markovich; KOKANOV, Innokentiy Ivanovich;  
MATSANOV, G.S., red.

[Preparing and using plastics in construction] Izgotov-  
lenie i primeneniye plastmass v stroitel'stve. Kiev,  
Budivsel'nyk, 1964. 21 p. (MIRA 18:1)

1. KOKANCY, V. M.
2. USSR (600)
4. Halogens--Russian Platform
7. Origin of the subterranean iodine-bromine waters of the Paleozoic of the Russian Platform. Izv. Glav. upr. geol. fon. no. 3 1947.
9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.



KOKANOVIC, R.

SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degree: / not given /

Affiliation: / not given /

Source: Belgrade, Veterinarski glasnik, No 4, 1961, pp. 295-301.

Data: "Enzootic of Leptospirosis in Military Horses in the Village of Glogonj."

Authors:

TURUDIC, V.

TRBIC, B.

KOKANOVIC, R.

PEJKOVSKI, J.

240

VIROTCHEKNO, I.I.; ~~KOKARI~~, I.N.; TAGER, A.R.

Soundproofing a mill. TSement 28 no.3:19-20 My-Je '62.  
(MIRA 15:7)

1. Volkhovskiy alyuminiyevyy zavod.  
(Milling machinery--Soundproofing)  
(Cement plants--Equipment and supplies)

LAPOTYSHKIN, N.M.; SLIVCHANSKAYA, V.V.; KOKAREKO, N.M.; FADEYEV, F.V.;  
PRAVDINA, T.E.

Rolling electrical steel slabs prepared by continuous casting on  
strip mills with hot reeler. Biul.TSIICM no.4:38-40 '61.  
(MIRA 14:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy  
metallurgii (for Lapotyshkin, Slivchanskaya). 2. Novolipetskiy  
metallurgicheskiy zavod (for Pravdina).  
(Rolling (Metalwork))

POLUKAROV, A. N.; KUPCHENKO, M. M.; Prinipali uchashtye: CHERNOBAY, A. I.;  
MALYZHEVA, Y. I.; ZHDANOVICH, Yu. V.; KORABEV, A. V.; KOLTYSHOV, D. I.

Tellurium recovery from copper-electrolysis slime into sodium  
slag. TSvet. met. 33 no.8:56-57 Ag '60. (MIRA 13:8)

(Copper--Electrometallurgy)  
(Tellurium)

S/539/61/000/032/010/017  
D247/D301

AUTHORS: Bakhchisarayts'yan, N.G., Kudryavtsev, N.T. and Kokarev, G.A.

TITLE: Investigating electrolytic nickel plating with intermittent current and with alternating current

PERIODICAL: Moscow. Khimiko-tekhnologicheskii institut. Trudy, no. 32, 1961. Issledovaniya v oblasti elektrokhimii, 266-271

TEXT: The authors studied the effects of such currents on the appearance of the plate, the current efficiency and the polarization of the nickel electrode. An electrolyte of composition  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  215g/l,  $\text{H}_3\text{BO}_3$  30g/l, NaF 4.2-4.5 g/l and NaCl 4 g/l was used in all the experiments. The deposit was 10 microns thick and was made on iron and brass plates 2.5x2.0 cm in size. The anode surface made of electrolytic nickel was from 2.5-5.0 times greater than the cathode surface. A platinum electrode of 0.35 cm<sup>2</sup> surface area was used in all the experiments. The appearance

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S/539/61/000/032/010/017  
D247/D301

Investigating electrolytic ...

of the deposit was assessed visually. An oscilloscope was used for measuring polarization and current strength, and the current efficiency was found by using two copper coulometers. Short period cycles were used. For intermittent current the cycles were 0.33, 1.0 and 1.9 sec. At 20°C and a current density of 3 amp/dm<sup>2</sup>, there was no observable difference in the appearance of the plate from that obtained with constant current, but the comparative current efficiency fell by 10%. The authors explained this by the diffusion of hydrogen ions into the cathodic layer of the electrolyte, during the breaks in current, producing a greater acidity round the cathode than that found under conditions of constant current. With breaks of shorter duration, the current efficiency increased but the effect was small. The rate of plating did not change with the use of intermittent current. The cathode potential reached its maximum almost immediately following connection, and on switching off, decreased sharply at first and then more slowly. It remained at greater negativity during the breaks than under stationary conditions. With alternating current, at 20°C, with a cathodic current density of 2-3.5 amp/dm<sup>2</sup>, and an anodic current density of 2-3 amp/dm<sup>2</sup>, a bright coating

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S/539/61/000/032/010/017  
D247/D301

Investigating electrolytic ...

was obtained up to 5-7 microns thick. With increased thickness the brightness decreased. At 40°C and current density of 4-6 amp/dm<sup>2</sup>, variation of the ratio of the durations of cathodic and anodic connection from 2 to 9 and a corresponding variation of the cycle time from 0.24 to 1.0sec gave no change in the appearance of the plate. The use of alternating current produced a noticeable decrease in current efficiency at the cathode. This could have been due to the ionization of hydrogen adsorbed on the cathode, taking place during anodic connection and increasing the hydrogen ion concentration round the cathode. This explanation was supported by the increase of current efficiency with the increased duration of cathodic connection, while the period of anodic connection was kept constant. Low pH values decreased the current efficiency to approximately the same extent for constant and intermittent current, while with alternating current pH values below 2.5 produced a sharper reduction. With a constant cathodic current density of 2 amp/dm<sup>2</sup>, an increase in anodic current density of 3 amp/dm<sup>2</sup> made the current efficiency fall to 30%, and a further increase to 4 amp/dm<sup>2</sup> gave a reduction to 4-5% and a sharp deterioration in the quality of the plate.

Card 3/4

*Р. К. Х. К. В. 4.*  
KONTUK, A.A.; KOKAREV, G.N.

Stratigraphy and age of ancient series of the Kirghiz Range.  
Trudy Inst.geol.AN Kir.SSR no.8:39-48 '56. (MLRA 10:2)  
(Kirghiz Range--Geology, Stratigraphic)



KOKAREV, G. V.

Petrography of the dike complex in the western end of the Kirghis  
Range. Trudy Inst. geol. AN Kir. SSR no.10:17-24 '58.

(MIRA 12:9)

(Kirghis Range--Dikes (Geology))

~~YOKABER, A.N.~~

Intrusive complexes in the western end of the Kirghiz Range.  
Trudy Inst. geol. AN Kir. SSR no.10:167-190 '58.

(MIRA 12:9)

(Kirghiz Range--Recks, Igneous)

KOKAREV, G. N.

Cand Geol-Min Sci - (diss) "Intrusive complexes of the western part of the Kirgiz Ridge." Tashkent, 1961. 20 pp; (Tashkent State Univ imeni V. I. Lenin); 150 copies; price not given; (KL, 10-61 sup, 209)

**"APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723620019-1**

**APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723620019-1"**

**"APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723620019-1**

**APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723620019-1"**

ZAKHAROV, D.; KOKAREV, I.

Mechanizing labor-consuming operations in lumbering. WTO  
no.9:19 8 '59. (MIRA 13:1)

1. Chlen Nauchno-tekhnicheskogo obshchestva lesnoy promyshlennosti Sverdlovskogo sovnarkhosa (for Zakharov). 2. Uchenyy sekretar' soveta pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva lesnoy promyshlennosti Sverdlovskogo sovnarkhosa (for Kokarev).  
(Lumbering--Machinery)

KOKAREV, I., inzh. (Sverdlovsk)

Small composite brigades in lumbering. Sots.trud 5 no.4:137-138 Ap  
'60. (MIRA 13:9)

(Sverdlovsk Province--Lumbering--Labor productivity)

KOKARIV, M.N.

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predl. v stroi. no.119:25-26 '55. (MIRA 9:7)  
(Cranes, derricks, etc.)



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1. Chlen prezidiuma Vologodskogo soveta professional'nykh soyuzov.  
(Vologda Province—Trade unions)

*Br. ab.* KOKAREV, N. I.

*B1-3 Petroleum*

Search for an efficient fuel for space rockets. N. I. Kokarev, D. K. Kuznetsov, and S. P. Lavrenko. *Isk. 1948, No. 3, 111-115*.  
J. / Four different fuels, including kerosene, alcohol, and chemical  
properties relative to the combustion efficiency have been discussed,  
and various designs of rocket fuel-air burners in the U.S.S.R. are  
compared with those in use in the U.S.A. Further research to  
obtain more effective use of fuel oil in the open-hearth furnace is  
necessary. K. B. CLARK.

*Ural Industrial Ind.*

KOKAREV, N. I., jt. au.

Umrikhin, P. V. Principles of accelerated open-hearth smelting; theory and practice  
Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1951  
131 p. (54-40371)

TN740.U5

KOKAREV, N.I.

KAVADZHOV, A.V.; KUROCHKIN, B.M.; SHIROKOV, G.I.; KOKAREV, N.I., dotsent,  
retsensent; PANFILOV, M.I., inshener, retsensent.

[Thermal processes of open-hearth furnaces in rapid steel making]  
Teplovye reshiy martenovskikh pechei pri skorostnom stalevarenii.  
Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi  
metallurgii, 1953. 140 p. (MLRA 7:6)

1. VNIIT. (Open-hearth process)

KITAYEV, B.I., professor, doktor tekhnicheskikh nauk; KOKAREV, M.I., dotsent, kandidat tekhnicheskikh nauk; ZAGSTROVSKIY, I.P., dotsent, kandidat tekhnicheskikh nauk; ZAMOTAYEV, S.P., inzhener; CHIKIL'DIN, A.A., inzhener; MOROZOV, N.A., inzhener; LEVIN, L.I., inzhener.

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(MLRA 9:5)

(Open-hearth furnaces)

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KOKAREV, N. I. — "Investigation and perfection of the Thermal Operation of Open-Hearth Furnaces in the Plants in the Urals." Min Higher Education USSR. Ural Polytechnic Inst imeni S. M. Kirov. Sverdlovsk, 1956  
(Dissertation for the Degree of Doctor in Technical Sciences).

SO: Knizhnaya Letopis', No 9, 1956

*Kokarev, N.I.*

130-12-17/24

**AUTHORS:** Kokarev, N.I., Candidate of Technical Sciences, Ilsiyenko, V.G., Goncharevskiy, Ya.A., and Beloshapkin, V.G., Engineers.

**TITLE:** Industrial Testing of Open-hearth Ports with Ejection of Hot Air (Promyshlennoye ispytaniye golovok martenovskikh pechey s ezheksiyey goryachego vozdukha)

**PERIODICAL:** Metallurg, 1957, No.12, pp. 28 - 29 (USSR).

**ABSTRACT:** Recalling that 3-10% decrease in tap-to-tap time and 4-16% decrease in fuel consumption had been obtained in 1953 at Magnitogorsk by ejecting cold atmosphere air into the gas ports, the authors describe more recent developments on the ejection of hot air. The idea of the new type of end (Fig.1) was due to the Ural Polytechnical Institute (Ural'skiy politekhnicheskii institut) and provides for better distribution of combustion products between the gas and air checkers (a bypass channel being provided), as well as increased gas velocity. The characteristics of the design were studied with models, the results also explaining the comparatively low effectiveness of cold-air ejection at the works. The new ends were incorporated in a 380-ton furnace at the Magnitogorsk Metallurgical Combine (Magnitogorskiy metallurgicheskiy kombinat), fired on mixed (coke-oven and blast-furnace) gas and provided with a magnesite-chromite roof. The bottom area was 73.7 m<sup>2</sup>, the volume of the

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Industrial Testing of Open-hearth Ports with Ejection of Hot Air 130-12-17/24

air and gas checkers being 160 and 93 m<sup>3</sup>, respectively. The cross-section of the by-pass channels was 400 x 560 mm, the port opening being decreased. Tar nozzles were located at the gas slag-pocket ends. Studies of the temperature distribution were made (Fig.2) under various conditions and durations of the various periods of the process were measured. With compressed air at 2 atm. gauge, the efficiency of combustion improved and more even re-generator temperatures were obtained. A number of design defects were found: difficulty of inspection and clearing of the bottom of the gas port and its replacement; tendency of dust to deposit in the by-pass channel. In spite of these and some operating difficulties, the fuel consumption when the new end was used fell to 110-115 kg/ton in spite of a more rapid firing (up to 33-34 million cal/hour during charging). There are 2 figures and 1 table.

AVAILABLE: Library of Congress  
Card 2/2

*KOKAROV NT*

KHODAKOVSKIY, V.V.; YEFIMOV, V.A., kand. tekhn. nauk, starshiy nauchnyy rabotnik; KOSENKO, P.Ye., kand. tekhn. nauk; KAZAKEVICH, S.S.; LAPITSKIY, V.I., prof., doktor tekhn. nauk; FILIP'YEV, O.V.; STROGANOV, A.I., kand. tekhn. nauk, dots.; DEMIDOVICH, A.V.; BORNATSKIY, I.I., kand. tekhn. nauk; MEDZHIBOZHSKIY, M.Ya., dots.; KOCHO, V.S., prof., doktor tekhn. nauk; RYH'KOV, V.I.; LOMAKIN, L.M., mladshiy nauchnyy sotrudnik; KOKAROV, N.I., dots.; KLYUCHAREV, A.P.; PLYUSHCHENKO, Ye.A.; KAPUSTIN, Ye.A., kand. tekhn. nauk, dots.; KOBENZA, I.I., kand. tekhn. nauk, nauchnyy sotrudnik; SHIROKOV, G.I.; UMBIKHIN, P.V., prof., doktor tekhn. nauk; LIZHAVA, K.I.; ZHIGULIN, W.I.; MOROKOV, P.K.; KHEBENIKOV, A.Ye., prof., doktor tekhn. nauk, starshiy nauchnyy sotrudnik; TARASOV, N.S.; NIKOLAYEV, A.G.

Discussions, Biul. TSENICHEN no.18/19:40-66 '57. (MIRA 11:4)

1. Starshiy inzhener Glavspetsstali Ministerstva chernoy metallurgii SSSR (for Khodakovskiy).
2. Institut gaza (for Yefimov).
3. Direktor Dneprodzershinskogo metallurgicheskogo instituta (for Kosenko).
4. Nachal'nik laboratorii Leningradskogo instituta ogneporov (for Kazakevich).
5. Zaveduyushchiy kafedroy metallurgii stali Dnepropetrovskogo metallurgicheskogo instituta (for Lapitskiy).
6. Nachal'nik laboratorii Giprostali (for Filip'yev).
7. Gelyabin-skiy politekhnicheskii institut (for Stroganov).
8. Nachal'nik teplotekhnicheskoy laboratorii Severakogo metallurgicheskogo zavoda (for Demidovich).
9. Zamestitel' nachal'nika Tsentral'noy zavodskoy laboratorii Makeyevskogo metallurgicheskogo zavoda (for Bornatskiy).

(Continued on next card)

KHODAKOVSKIY, V.V.---(continued) Card 2.

10. Sibirskiy metallurgicheskiy institut (for Medzhibozhskiy).
11. Zaveduyushchiy kafedroy metallurgii stali Kiyevskogo politekhnicheskogo instituta (for Kocho). 12. Ispolnyayushchiy obyazannosti glavnogo inzhenera Beloretzskogo metallurgicheskogo kombinata (for Ryn'kov). 13. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki (for Iomakin). 14. Ural'skiy politekhnicheskii institut (for Kokarev). 15. Zamestitel' nachal'nika teplotekhnicheskoy laboratorii Nizhne-Tagil'skogo metallurgicheskogo kombinata (for Klyucherov). 16. Nachal'nik teplotekhnicheskoy laboratorii Tsentral'noy zavodskoy laboratorii zavoda im. Voroshilova (for Flyushchenko). 17. Zhdanovskiy metallurgicheskiy institut (for Kapustin). 18. Institut metallurgii im. Baykova AN SSSR (for Kobza). 19. Nachal'nik laboratorii martenovskikh pechey Vsesoyuznogo nauchno-issledovatel'skogo instituta metallurgicheskoy teplotekhniki (for Shirokov). 20. Zaveduyushchiy kafedroy metallurgii stali Ural'skogo politekhnicheskogo instituta (for Umrikhin). 21. Nachal'nik metallurgicheskoy laboratorii Tsentral'noy zavodskoy laboratorii Zakavkazskogo metallurgicheskogo zavoda (for Leshava). 22. Zamestitel' glavnogo inzhenera zavoda im. Petrovskogo (for Zhigulin). 23. Nachal'nik martenovskogo tsekha Kuznetskogo metallurgicheskogo kombinata (for Morokov). 24. Institut metallurgii im. Baykova AN SSSR (for Khlebnikov). 25. Glavnyy inzhener Petrovsk-Zabaykal'skogo metallurgicheskogo zavoda (for Tarasov). 26. Nachal'nik tsekha Magnitogorskogo metallurgicheskogo kombinata (for Nikolayev).

(Open-hearth process)

25(2); 18(3)

PHASE I BOOK EXPLOITATION

SOV/1573

Kokarev, Nikolay Ivanovich, Petr Pimenovich Semenenko, Nikolay Georgiyevich Kamkin, and Yevgeniy Stepanovich Popov

Uluchsheniye konstruktsiy i ekspluatatsii martenovskikh pechey s osnovnymi svodami (Improvements in Design and Operation of Open-hearth Furnaces With Basic Roofs) Sverdlovsk, Metallurgizdat, 1958. 55 p. 3,000 copies printed.

Ed.: S.D. Fedorov; Ed. of Publishing House: B.E. Berman;  
Tech. Ed.: Ye.M. Zef.

PURPOSE: The book is intended for foremen in open-hearth furnace shops and may be of use to production engineers and for students of vuzes and tekhnikums.

COVERAGE: In this book the author examines the problems of improving the design of open hearth furnaces with magnesiochromite basic roof linings. It has been established that open-hearth furnaces

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# Improvements in Design (Cont.)

SOV/1573

With such roof linings perform better than similar furnaces with Dinas brick roof linings. The data presented by the Metallurgical Kombinat imeni A.K. Serov indicate that the new lining is three times more durable than the old. To take full advantage of the new lining it was thought necessary to redesign and improve the efficiency of the fuel ducts and burner ports. The importance of the proper thermal regime, slag control, and the fundamentals of the proper pouring technique of quality steel are explained. The text contains numerous diagrams, charts, and illustrations. There are 8 Soviet references. No personalities are mentioned.

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# Improvements in Design (Cont.)

SOV/1573

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6-8-59

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SOV/137-59-5-9885

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 60 (USSR)

AUTHORS: Kokarev, N.I., Semenenko, P.P., Kapichev, A.G.

TITLE: Improved Design of Open Hearth Furnace Heads

PERIODICAL: Prom. ekon. byul. Sovnarkhoz Sverd. ekon. adm. r-na, 1958, Nr 7, pp 45 - 48

ABSTRACT:

The author describes a 3-channel burner head of the Metallurgical Combine imeni Serov where compressed air injects preheated regenerative air into the gas caisson through two outlet channels located at the caisson level. Another improvement of the head consists in the injection of hot air through apertures which connect the gas caisson directly with the vertical air ducts. The author describes the UPI heads having double lateral injection of hot air and an injector mounted in the head vault. The injectors ensure that the caissons are supplied with  $\geq 10\%$  of the total amount of air entering the furnace. The injection of air and the partial combustion of the fuel accelerate the rate of gas discharge to 55 - 65 m/sec; the flame temperature

Card 1/2

KOKAREV, N.I.

PLANE I BOOK EXPLANATION 507/5090

Sovetskoye gosudarstvennoye izdatel'stvo. Alma-Ata, 1956

Trudy Sovetskoye gosudarstvennoye izdatel'stvo. Alma-Ata, 25-26 oktyabrya 1956 g. (Transactions of the Conference on Applied Gas Dynamics, held in Alma-Ata, 25-26 October 1956) Alma-Ata: Izdatel'stvo Kazakhskoy SSR, 1956. 23 p. Kirta ally inserted. 900 copies printed.

Sponsoring Agency: Akademiya nauk Kazakhskoy SSR. Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova.

Editorial Board: Resp. Ed.: L.A. Valls; V.P. Kakhovskiy; T.P. Leont'yeva and B.P. Ustimenko. Ed.: V.V. Aleksandriyevskiy. Tech. Ed.: S.P. Buvitkin.

PURPOSE: This book is intended for personnel of scientific research institutes and industrial engineers in the field of applied fluid mechanics, and may be of interest to students of advanced courses in the field.

# Transactions of the Conference (Cont.)

507/5090

COVERAGE: The book consists of the transcriptions of 31 papers read at the conference on gas dynamics which was convened under the initiative of the Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova (Kazakh State University imeni S.M. Kirova) and the Institut energetiki Akademi nauk Kazakhskoy SSR Institute of Energy Engineering of the Academy of Sciences Kazakhskoy SSR) and held October 25-26, 1956. Three branches of applied gas dynamics were discussed, namely: 1. Flow of liquids and gases, aerodynamics of turbine passages, and the motion of liquids. The practical significance of the "transcriptions" of the conference consists in the adaptation of theory to methods of technical computation and searching methods related to industrial furnaces and other industrial processes in which aerodynamic phenomena play a predominant role. Eight papers read at the conference are not included in this collection for various reasons. The authors of the missing papers are: L.B. L'vov (Thermal and Aerodynamic Characteristics of Piloted Coal Flame Burners) and A.A. Gulyayevskiy (Outlines and Physical Basis of the Jet Motion Mechanics of Fluids), R.I. Anisimov, Ye. P. Buzik, S.V. Kuznetsov, T.K. Kuznetsov, A.B. Kuznetsov, and O.V. Ivanov. L.O. Kopylovskiy is mentioned as being in charge of a department of the Kazakhskiy Universitet, and I.B. Malyukov, Candidate of Physical and Mathematical Sciences, Doctor, at a number of the same university. References are found at the end of

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Kakhovskiy, V.P. (Candidate of Physical and Mathematical Sciences). On Parallel and Contrary Motion of Two Uniform Flows of Compressible Gas

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507/5090

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77

Chelobakh, P.V. (Vsesoyuznyy elektrotekhnicheskii institut (All-Union Electrotechnical Institute)). Electrodynamometers and Their Use in Investigating Enthalpic Gas Flow

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Yakovlev, A.V. (Director). Some Problems of Flow Thermodynamics in Well-Burned Conditions		187

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SOV/133-59-4-5/32

AUTHORS: Kokarev, N.I., Candidate of Technical Sciences, Docent, Kapichev, A.G., Lisiyenko, V.G., Semenenko, P.P., and Tyulebayev, V.G., Engineers

TITLE: Thermotechnical Investigation of Open Hearth Furnace Jet Nozzles Injecting Air Into Gas Ports (Teplotekhnicheskiye ispytaniya golovok s inzhektsiyey vozdukha v gazovyy prolet)

PERIODICAL: Stal', 1959, Nr 4, pp 306-311 (USSR)

ABSTRACT: The results of experiments with various types of jet nozzles with injection of preheated or cold air are described. The designs of jet nozzles tested are shown in Fig 1 and table 1. Hot air from regenerators was supplied through special flues lined with refractory bricks and is introduced into the port through a special tuyere mixer, as an injection medium compressed air was used. It was found that: 1) at a pressure of compressed air of about 2.5 atm and its consumption of 330 n m<sup>3</sup>/hr, about 1650 n m<sup>3</sup>/hr of preheated air is injected into the gas port. This amounts to about 10% of the total amount of air supplied to the furnace;

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Thermotechnical Investigation of Open Hearth Furnace Jet Nozzles  
Injecting Air Into Gas Ports

2) during the period when the waste gas is passing through the gas port, the tuyere of the injector can pass from the air flue to the gas flue about 1200 n m<sup>3</sup>/hr of waste gas; this amounts to 5 to 7% of the total amount of the waste gas; 3) the injection of cold air into the gas port is accompanied by an increase (in comparison with a Venturi type port) in the flame temperature at the first door of 20 to 25°C while the injection of hot air - by an increase of 40 to 50°C (Fig 2 and 3). This increases the flow of heat to the bath with cold air by 3% and with hot air up to 8% (at the first door) Fig 4. Simultaneously, the heat absorption of the bath also increases see Fig 5; 4) the injection of air into the gas port leads to a partial combustion of fuel in the port and to a decrease in the proportion of not completely burned fuel (table 2); 5) when injecting hot air the dynamic pressure of the stream of gas at the outlet from the port increases approximately 1.5 times. The increase in the dynamic pressure and the temperature of the flame leads to an increase in the flame velocity see Fig 7; 6) with increasing pressure of compressed

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Thermotechnical Investigation of Open Hearth Furnace Jet Nozzles  
Injecting Air into Gas Ports

air in the injector the static pressure in the gas uptake also increases (Fig 8); 7) with the injection of hot air into the gas port the duration of heats decreases and the productivity of furnaces increases (in comparison with operation with the Venturi type port or with the injection of cold air). It is considered that the experiments should be continued in order to establish the most rational placing of the injecting tuyeres to decrease dust deposition in the tuyeres to a minimum. There are 8 figures and 2 tables.

ASSOCIATION: Ural'skiy Politekhicheskiy Institut i Metallurgicheskii Kombinat im. A.K.Serova (Ural Polytechnical Institute and the Metallurgical Combine imeni A.K.Serov)

Card 3/3

KOKAREV, N.I., dotsent, kand. tekhn. nauk; LISIYENKO, V.G., inzh.

Modeling the ports of open hearth furnaces with air ejection into the gas passage. Izv. vys. ucheb. zav.; chern. met. 2 no.4:101-111 Ap '59. (MIRA 12:8)

1.Ural'skiy politekhnicheskoy institut. Rekomendovano kafedroy gasopechnoy teplotekhniki Ural'skogo politekhnicheskogo instituta. (Open-hearth furnaces--Models)

LISIYENKO, V.G., inzh.; ~~KOKAREV, M.I.~~, dots., kand.tekhn.nauk;  
TROYB, S.G., prof., doktor tekhn.nauk

Motion-picture photography of the fuel oil burner flame in  
open-hearth furnaces. Izv.vys.ucheb.zav.; chern.met. 2  
no.8:127-134 Ag '59. (MIRA 13:4)

1. Ural'skiy politekhnicheskiy institut. Rekomendovano kafedroy  
metallurgicheskikh pechey Ural'skogo politekhnicheskogo  
instituta.

(Open-hearth furnaces--Equipment and supplies)  
(Motion pictures in industry)

18.3200

77448

SOV/133-60-1-9/30

AUTHORS: Filatov, V. P., Semenenko, P.P. (Engineers), Kokarev,  
N. I. (Candidate of Technical Sciences), and  
Kapichev, A. G., Aleksandrov, S. F. (Engineers)

TITLE: Smelting High-Quality Open-Hearth Steels Using  
Moderate and High-Sulfur-Content Mazut

PERIODICAL: Stal', 1960, Nr 1, pp 36-39 (USSR)

ABSTRACT: This is a report concerning the experience of sub-  
stituting blast furnace gas in open-hearth process by  
the comparatively cheap high-sulfur-content mazut  
(Russian petroleum residue used as fuel oil) of  
Ural-Volga origin. It was established that the  
successful combustion of high-sulfur-content mazut  
requires conditions assisting the transition of the  
sulfur of the fuel into sulfurous anhydride (which is  
considerably more stable than  $H_2S$ ,  $CS_2$ , and  $COS$ )  
directly at the root of the flame. This can be  
achieved by careful mixing of air and atomized mazut,

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Smelting High-Quality Open-Hearth Steels Using  
Moderate and High-Sulfur-Content Mazut

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by short flame combustion of the mixture (in the vicinity of the burner head), or by preliminary gasification of mazut. The conversion of open-hearth furnaces to high-sulfur-content mazut was preceded by the development of the UPI burner heads design (N. I. Kokarev, P. P. Semenenko, and A. G. Kapichev, Industrial-Economic Bulletin, Sverdlovsk Council of the National Economy, TsBTI, 1958, Nr 7). As a result of this work the 25- and 160-ton open-hearth furnaces were converted to high-sulfur-content mazut (2.3-2.8% S). They produced the 20P, 12Kh2N4A, 30KhGSA, 20Kh2N4A, E1366, E194 composition not given, and other steels with sulfur content not over 0.025-0.035% and the metal for acid processing ( $\leq 0.015$ -0.020% S) with some decrease of melt duration. Using the experience of the Magnitogorsk Combine, the 160-ton furnace was converted from gas-mazut firing to pure mazut firing without any substantial changes in the design of the lower part or in the "gas head" (see Fig. 1).

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Smelting High-Quality Open-Hearth Steels Using  
Moderate and High-Sulfur-Content Mazut

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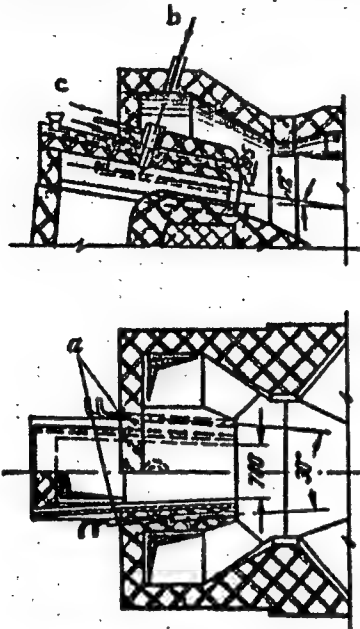


Fig. 1. The head of  
160-ton open-  
hearth furnace for burning  
mazut without its pre-  
liminary gasification.  
(a) Oil burner UPI-K;  
(b) compressor air feed;  
(c) inlet and outlet of  
water.

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Smelting High-Quality Open-Hearth Steels Using  
Moderate and High-Sulfur-Content Mazut

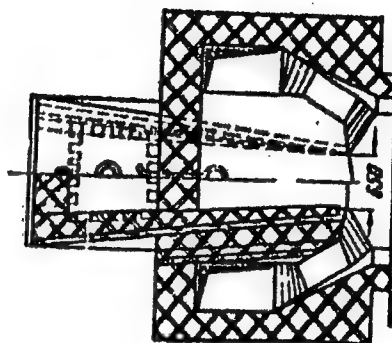
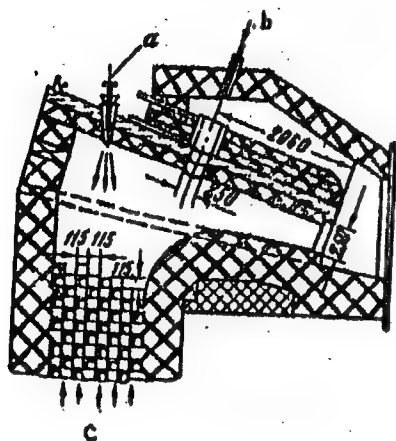
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The mazut oil burners UPI-K were installed in the sides of the former gas port. A high-pressure blower supplied primary air to the "fire head" through former gas regenerator. The secondary air was fed into the furnace through air regenerator. In the same alternate design of the furnace the existing "heads" were used for the first time for gasification of mazut in the gas uptake of the former gas port. The gasification of mazut in the head of 25-ton furnace was adapted since 1958. The air mazut atomized by the compressor (pressure not less than 1.5 atm gage) was delivered by the vertical oil burners (see Fig. 2) to meet with the 1,100° C primary air coming from the former gas regenerator. In the zone where the flows of atomized mazut and hot air meet, an intense combustion takes place, accompanied by the sharp raise of temperature (up to 1,550-1,750° C), evaporating and gasifying mazut.

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Moderate and High-Sulfur-Content Mazut

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See card 6/9 for caption.

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Fig. 2. A head of a 25-ton open-hearth furnace for firing with gasified mazut: (a) Oil burner UPI-K; (b) compressed air; (c) primary air (preheated).

The possibility of gasification of mazut permitted the utilization of the high-sulfur-content mazut for smelting of high-quality steels with moderate sulfur content and the accelerated sulfur removal during finishing (see Fig. 3).

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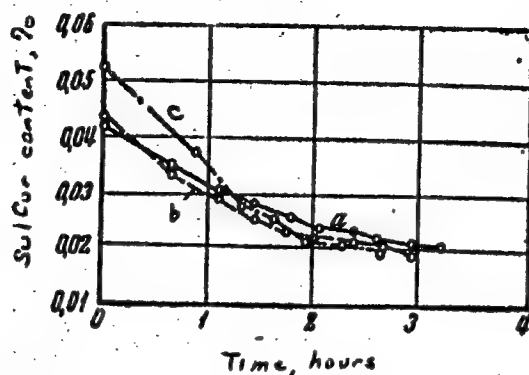


Fig. 3. Curves of desulfurization of metal (charge pig for acid processing) in the course of melting in the 160-ton furnace fired by: (a) mixture of blast furnace gas and mazut (0.8-2.2% S); (b) mazut without gasification (0.9-2.8% S); (c) gasified mazut (0.9-2.6% S).

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The authors arrived at the following conclusions:

(1) The developed method of firing the open-hearth furnaces by moderate and high-sulfur content mazut permits the production of high-quality steels with sulfur content of 0.020 up to 0.035% and the metal for acid processing (charge pig with 0.015-0.020% S).

(2) To decrease the transition of sulfur of the fuel into the slag and metal, a high completeness and intensity of combustion should be attained. This provides for transition of sulfur compounds into  $SO_2$  before the contact of gas with the surface of

slag and metal. (3) The adapted gasification of mazut can be achieved in former gas uptakes of UPI heads equipped by special injecting devices for increasing the velocity of mazut gas discharge and for the required distribution of the products of combustion over the former gas and air regenerators.

(4) The efficiency of combustion of liquid high-sulfur-content mazut directly in the working space

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of the furnace is somewhat lower than that of gasified mazut. (5) With mazut firing, the productivity of the furnace increases as a result of the increased thermal output of the furnace and improved combustion of fuel. There are 4 figures; 3 tables; and 6 Soviet references.

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AUTHORS: Lisiyenko, V. G. (Engineer), Kokarev, N. I. (Docent, Candidate of Technical Sciences)

TITLE: Metallurgical Power Engineering. Continuous Determination of Heat Absorption by an Open-Hearth Furnace Bath

PERIODICAL: Stal', 1960, Nr 1, pp 89-92 (USSR)

ABSTRACT: Since no data are available on the practical application of a method proposed by G. M. Glinkov, "Regulation of Temperature Conditions by Maintaining Maximum Heat Absorption of an Open-Hearth Furnace Bath," Stal', 1958, Nr 4) the authors investigate a simplified method of continuous control of heat absorption and efficiency in a 70-ton open-hearth furnace. Other participants in the study: D. K. Butakov, P. P. Babich, G. N. Nazar'yan, L. M. Mel'nikov, et al. Continuous control is even simpler in mazut-fired furnaces (mazut is a petroleum residue used as fuel oil) since gas temperature does not have to be determined. Optimal parameters of temperature conditions were determined in melting high-alloy steel

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in an open-hearth furnace provided with a new-type chrome-magnesite suspension roof developed by A. P. Panarin. Hard charge was used and mazut atomized under pressures of 5.0-5.5 atm. Finishing temperatures reached 1,690-1,720° C. Both backwall ports were equipped with stationary radiation pyrometers sighted on the uptakes. Screens and compressed air-blowing protected pyrometers from the effect of high temperatures. Data were recorded by electronic potentiometer EPP-09, and pyrometer readings verified by water-cooled tungsten-molybdenum thermocouples introduced at a height of 1.5 m from the working platform. A linear dependence was established between the temperatures of the uptake walls and the combustion products with the former only 50° C lower than the latter. By substituting conditional wall temperature  $t_c$  for actual wall temperature  $t_w$  the authors established a direct relation between conditional wall and air temperatures:

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$$t_{arc} = t_w + \frac{t_w - 1550}{2}, \quad (1)$$

where 1550 = conditionally assumed temperature at the beginning of measuring. The total heat absorption of bath surface  $Q_1$  was determined by approximate heat-balance equation of the working volume:

$$Q_1 = BQ_f(1 - q_3) + Q_a + Q_{CO} - Q_2 - Q_3, \quad (2)$$

and furnace efficiency by

$$\eta = \frac{Q_1}{BQ_f} = \frac{q_{11}}{BQ_f}, \quad (3)$$

where  $BQ_1^w$  = thermal load of furnace, cal/hr;  $q^3$  = heat of incomplete combustion in fractions of calorific power of fuel  $Q_1^w$ ;  $Q_a$  = physical heat of air, cal/hr;

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$Q_2$  = heat of combustion products, cal/hr;  $Q_{CO}$  = heat from complete burning of remaining CO released from bath, cal/hr;  $Q_5$  = thermal loss in working volume, cal/hr;  $q_1$  = specific heat absorption, cal/m<sup>2</sup>hr;  $H$  = hearth area, m<sup>2</sup>. In calculating the heat absorption of the bath the following factors were taken into account: (1) predetermined losses of compressed air; (2) penetration of cold air into the working volume; and (3) incomplete combustion. Total heat absorption calculated according to the heat diagram varied only 8-9% from experimental data.

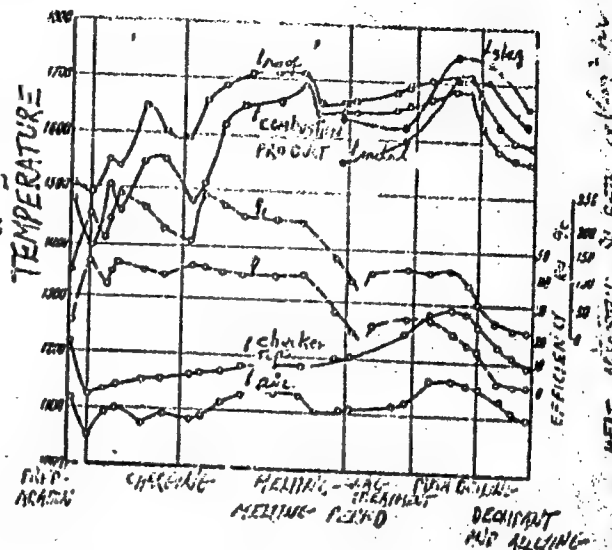
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Fig. 2. Changes in the heat absorption of bath ( $q_1$ ); furnace efficiency ( $\eta$ ); roof temperature ( $t_{\text{roof}}$ ); checker tops ( $t_{\text{checker tops}}$ ); combustion products ( $t_{\text{combustion products}}$ ); air ( $T_{\text{air}}$ ); slag ( $t_{\text{slag}}$ ); and metal ( $t_{\text{metal}}$ ) during melting of high-alloy steel.

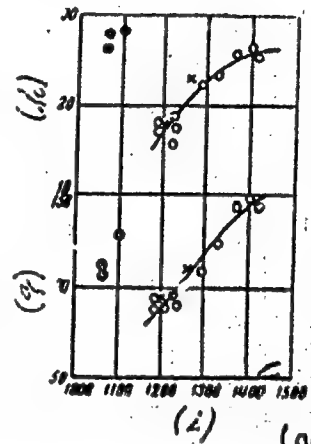
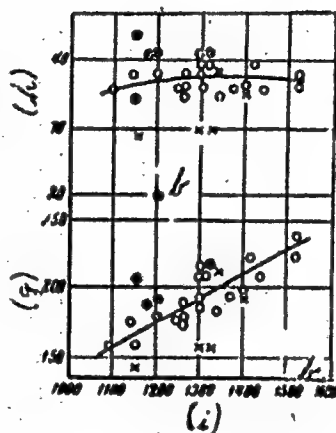
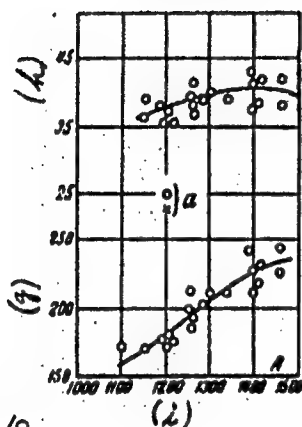


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The effect of thermal load on heat absorption and  
furnace efficiency as observed in six melts is shown  
in Fig. 3. Heat absorption was also studied with a  
view to pressure under the roof and coefficient of  
excess air.



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(cont.)

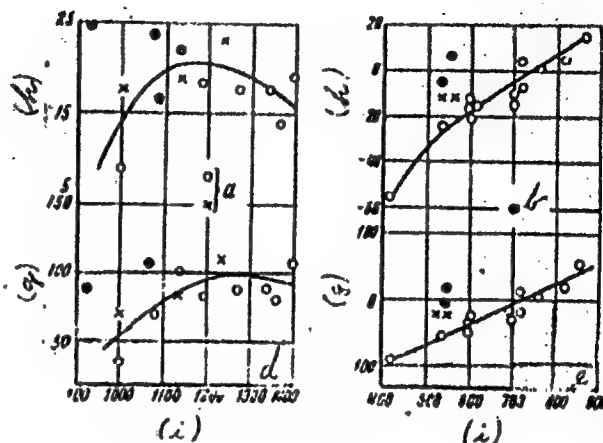
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(continued from preceding card)

Fig. 3. Heat absorption and  
furnace efficiency versus  
thermal load during melting:  
(a) charging; (b) melting  
down; (c) slag adjustment;  
(d) pure boiling; (e) de-  
oxidation and alloying  
(a = melting at regular  
temperature rates; b =  
= same, but improved tem-  
perature rates); g = heat  
absorption, 1,000 cal/m<sup>2</sup>/hr;  
h = thermal efficiency, %;  
i = mazut consumption,  
kg/hr.



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The highest rate of heat absorption was found to occur at 1.6-1.8 mm water column and a coefficient of excess air of 1.20-1.25. The authors divide the finishing period into the following stages. (1) At the initial stage forcing temperature conditions improve slag formation and accelerate the passing of impurities into slag (see Fig. 3b) despite reduced furnace efficiency (from 20 to 25%). (2) Maximum thermal load (12.0 million cal/hr) is maintained since metal heating occurs within the 1,690-1,720° C range. (3) The thermal load of the standstill period is used in deoxidation and alloying (see Fig. 3d). The thermal load which corresponds to the maximum heat absorption by the bath is almost identical in charging, melting, and initial finishing, and decreases to 12 million cal/hr during boiling. The peak of heat absorption was observed during charging and melting down (see Fig. 2). A comparison with gas-fired furnaces shows that in melting high-alloy steel in mazut-fired furnaces the temperature of combustion products is 50-70° C higher than in

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200-ton and by 100-150° C higher than in 350-ton gas-fired tilting furnaces toward the final melting-down and in the middle of the finishing period. In conclusion, the authors suggest the use of a photoelectric pyrometer or thermal probe which does not soil as easily as radiation pyrometers (by slag) and produces more reliable readings. There are 4 figures; 1 table; and 10 references, 9 Soviet, 1 U.K. The U.K. reference is: R. Barber, D. Meachen, W. Bateman, Journal of the Iron and Steel Institute, Vol 185, p 3, March, 1957.

ASSOCIATION: Ural Polytechnic Institute (Ural'skiy politekhnicheskiy institut)

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